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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/840,068	05/05/2004	Paul M. Welch	10040517-1	6650

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EXAMINER	
SHAPIRO, LEONID	

ART UNIT	PAPER NUMBER
2629	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/840,068	WELCH ET AL.	
	Examiner	Art Unit	
	Leonid Shapiro	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 May 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 7-1-05
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1-4, 7,10-11,14 are rejected under 35 U.S.C. 102(e) as being anticipated by Bohn (7,068,257 B1).

As to claim 1, Bohn teaches an optical tracking assembly for an optical mouse (col. 1, lines 18-22), comprising:

a light source (fig. 2, item 210, col. 4, lines 25-28);

an optical sensor chip (fig. 2, item 204 and fig. 7, item 204, col. 4, lines 25-28); and

an integral optics assembly (fig. 2, item 200, col. 4, lines 13-15), comprising:

lenses (fig. 7, items 114a-114b, col. 7, lines 4-7);

light source alignment features receiving the light source, the light source alignment features centering the light source to the lenses and controlling a distance the light source is placed away from a navigation surface that reflects light onto the optical sensor chip (figs. 4,7, items 100,102, col. 7, lines 8-11).

As to claim 2, Bohn teaches the lenses are selected from the group consisting of

(1) collimating lenses for collimating light from the light source along a first optical axis to the navigation surface, and (2) imaging lenses for imaging reflected light from the navigation surface along a second optical axis to the optical sensor chip (fig. 7, items 114a-114b, 120, col. 6, lines 4-7 and 45-56).

As to claim 3, Bohn teaches at least three guides for centering the light source (fig. 2, item 102).

As to claim 4, Bohn teaches the light source alignment features further include a ledge within the guides for controlling the distance the light source is placed along the first optical axis away from the navigation surface (fig. 7, item 112).

As to claim 7, Bohn teaches a printed circuit board (PCB) onto which the optical sensor chip is mounted (fig. 7, items 200,204).

As to claims 10,14 Bohn teaches a mouse base plate, wherein the integral optics assembly is mounted on the mouse base plate (figs. 3,7, items 12,18,102, col. 3., lines 65-67).

As to claim 11, Bohn teaches a method for assembly an optical tracking assembly for an optical mouse (col. 1, lines 18-22),

comprising:

mounting an optical sensor chip on a printed circuit board (PCB) (fig. 7, items 200,204, col. 6, lines 57-59);

inserting an integral optics assembly through a cutout defined by the PCB until the sides of the integral optics assembly are flush against the cutout (figs. 4,7, items 100,102,200); inserting a light source in light source alignment features on the integral

optics assembly, the light source alignment features centering the light source to lenses integral with the integral optics assembly, the light source alignment features further controlling a distance from the light source to a navigation surface (figs. 4,7, items 34,100,102,114,200,210, from col. 6, line 57 to col. 7, line 11).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 6,8-9,12-13,15 are rejected under 35 U:S.C. 103(a) as being unpatentable over Bohn in view of Theytaz et al. (7,131,751).

As to claim 15, Bohn teaches an optical tracking assembly for an optical mouse (col. 1, lines 18-22), comprising:

a light source (fig. 2, item 210, col. 4, lines 25-28);

a printed circuit board (PCB) defining a cutout (fig. 2,item 202);

an optical sensor chip mounted on the PCB (fig. 2, item 204 and fig. 7, item 204, col. 4, lines 25-28), the optical sensor chip comprising

a protruding alignment feature (fig.2, item 102);

an integral optics assembly inserted at least partially through the cutout (fig. 2, item 200, col. 4, lines 13-15 and fig. 7, items 102,200), the

integral optics assembly comprising:

guides receiving the light source, the guides centering the light source

along a first optical axis (fig. 7, items 102,200 from col. 6, line 57 to col. 7, line 11);

a ledge within the guides abutting the light source, the ledge

controlling a distance of the light source along the first optical axis

away from a navigation surface (fig. 7, item 112);

collimating lenses along the first optical axis for directing light from

the light source onto the navigation surface (fig. 7, item 120, col. 6, lines 45-56);

imaging lenses for directing the light along a second optical axis from

the navigation surface to the optical sensor chip (fig. 7, items 114a-114b, col. 7, lines 4-7);

an alignment hole for receiving the protruding alignment feature when the integral optics assembly is inserted at least partially through the cutout of the PCB (figs. 4-6, item 104).

Bohn does not disclose the protruding alignment feature on the optical sensor chip and a retention clip engaged to the integral optics assembly to retain the light source.

Theytaz et al. teaches the protruding alignment feature on the optical sensor chip (in reference IC pins to PCB) and a retention clip engaged to the integral optics assembly to retain the light source (fig. 2B, items 210,216,218, col. 4, lines 23-43).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate teachings of Theytaz et al. into Bohn system in order to align LEDs and rest of the system (col. 2, lines 29-30 in the Theytaz et al. reference).

As to claims 6,13 Theytaz et al. teaches a retention clip engaged to the integral optics assembly to retain the light source (fig. 2B, items 210,216,218, col. 4, lines 23-43).

As to claim 8,12 Theytaz et al. teaches the protruding alignment feature on the optical sensor chip (in reference IC pins to PCB) (fig. 2B, items 216,218).

As to claim 9, Bohn teaches the PCB defines a cutout that receives the integral optics assembly (fig. 2, items 102,202).

3. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bohn as applied to claim 1 above, and further in view of Svetlichny (3,741,653).

Bohn does not disclose the light source is a laser.

Svetlichny teaches the light source is a laser (fig. 3, col. 3, lines 15-25).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate teachings of Svetlichny into Bohn system in order to combine laser and optical tracking assembly (col. 3, lines 15-18 in the Svetlichny reference).

Telephone Inquire

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonid Shapiro whose telephone number is 571-272-7683. The examiner can normally be reached on 8 a.m. to 5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe can be reached on 571-272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LS
06.11.07

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